



Expedited Petition of the Office of Regulatory Staff to
Suspend and Hold Universal Service Fund
Disbursements to Frontier Communications of the
Carolinas, LLC

Docket No. 2019-352-C

South Carolina
Office of Regulatory Staff

January 30, 2020

The South Carolina Office of Regulatory Staff ("ORS") examination focused on Frontier's operational practices related to service outage prevention and restoration and the Company's utilization of state Universal Service Fund ("USF") support. ORS reviewed Frontier's South Carolina plant in service and the Company's policies and procedures to prevent, respond to, and restore service interruptions. ORS examined Frontier's books, records, and accounting practices to determine if the Company demonstrated that it uses USF support in South Carolina for the programs for which it was intended. ORS did not conduct an audit or examination of Frontier's overall financial integrity nor that of its parent company, Frontier Communications Corporation.

Findings and Recommendations

ORS shares the following findings with the South Carolina Public Service Commission ("Commission"):

1. Frontier's operational practices related to reporting and restoration of local service outages within a reasonable period of time need improvement. Outages lasting 23 days are unacceptable.
2. Frontier's outage procedures were inadequate and its corrective action to improve and revise its service restoration procedures for outages affecting less than 100 customers is appropriate.
3. Frontier produced records that demonstrate Frontier expends amounts in South Carolina greater than the amount received in USF support for the provision of voice communication services.
4. Frontier's accounting practices related to tracking and identifying USF-related capital expenditures and operating expenses in South Carolina need improvement.

ORS shares the following recommendations for Frontier's South Carolina operations with the Commission:

1. ORS recommends Frontier develop, and submit to the Commission, (a) proposed procedures to notify the Commission, ORS, local County/City Administrators or Managers, and local County/City Emergency Managers of

any extended service outage affecting the provision of 9-1-1 service to customers, and (b) proposed options to provide alternate means for affected customers to contact 9-1-1 service during extended service outages.

2. ORS recommends Frontier report annually to the Commission on the status of the Company's switches and remotes in service that have exceeded their useful service life or are no longer supported by the equipment manufacturer and the Company's plans to upgrade and/or replace aging equipment.
3. ORS recommends Frontier take the necessary steps to maintain an inventory of equipment in South Carolina sufficient to restore service in a reasonable and timely manner (within 24 to 48 hours).
4. ORS recommends Frontier perform a review of the skills and technical expertise required for South Carolina technicians to determine if additional employees and/or training is needed in South Carolina to enable its South Carolina workforce to perform tasks currently executed by the Company's Texas-based NOC technicians.
5. ORS recommends Frontier implement a project monitoring system to specifically track and identify USF-related capital and operational expenditures in South Carolina. The project monitoring system should enable the Company to designate capital investments or operating expenses as being funded by USF support.
6. ORS recommends Frontier dedicate a greater portion of the USF support the Company receives on capital investments to replace aging infrastructure in rural areas of its service territory rather than support recurring operational expenses.
7. ORS recommends Frontier engage in efforts to budget for planned network investments and plant modernization efforts at least two fiscal years in advance.

Background

On October 10, 2019, 22 Frontier customers in the St. Luke Community of Georgetown County experienced an extended outage of basic local exchange telephone ("landline") service. This outage persisted for 23 days with service restored for the customers on November 1, 2019. During that time, customers were without landline telephone service and 9-1-1 service while the Company engaged in a lengthy internal process to diagnose the problem and implement a solution.

ORS was notified of the outage by a member of the South Carolina General Assembly on October 21, 2019. ORS contacted Frontier that same day to inquire about the outage. Frontier advised that the remote terminal serving the area stopped functioning and briefed ORS on the Company's efforts to restore service.

On October 25, 2019, ORS discussed the outage with Frontier via email and conference call. During the conference call with ORS, Frontier indicated the network equipment that caused the extended outage was antiquated, no longer supported by the manufacturer, located in a remote area, and "had run its course." In addition, Frontier indicated it (1) would pursue installing old technology, or load coils, to restore service and (2) may look at replacing or upgrading the failed remote digital terminal in the future, if it was feasible from an engineering and cost perspective. Frontier was instructed to keep ORS updated as to progress in restoring service. ORS informed Frontier that ORS would be notifying the Commission of the extended service interruption.

ORS notified the Commission of the outage via a letter filed October 25, 2019, which asserted the continued delay in resolving the outage was in violation of Frontier's obligation to restore service within the shortest time practicable. ORS requested the Commission direct and order Frontier to restore service immediately. ORS alleged that the extended outage demonstrated Frontier may not be honoring its commitment to invest in and maintain its network to provide basic telephone service to its customers, as it is obligated to do in exchange for receiving USF support.

On October 30, 2019, Frontier filed a letter with the Commission providing an update on its efforts to restore service to the St. Luke Community. Frontier acknowledged that an extended outage had occurred and that initial repair attempts had failed. Frontier expected to restore service by no later than November 4, 2019 and indicated it would provide bill credits to affected customers and contact each individually to ensure they are receiving quality service.

The Commission issued Order Number 2019-755 on October 30, 2019, directing Frontier to restore service immediately and that, consistent with any safety issues, such restoration was to be completed no later than November 4, 2019. Frontier was directed to provide the Commission (1) copies of trouble reports, if any, prepared pursuant to S.C. Code Reg. 103-653 (2) a detailed report of what caused the outage (3) what action was being taken to remedy the outage and (4) a report on what it will do to prevent similar failures in the future.

Frontier filed with the Commission, on November 1, 2019, the trouble reports and a report on the outage, as directed by the Commission. The outage report stated that Frontier became aware on October 10, 2019, that multiple customers in the St. Luke Community were without service. Frontier reported that it had provided an initial month's credit to each of the 22 impacted customers and would contact each customer to ensure they have quality service and to discuss additional credits.

On November 4, 2019, Frontier filed a letter informing the Commission that service restoration was complete for the St. Luke Community. During a conference call with ORS on November 7, 2019, Frontier indicated that it had spoken with each affected customer regarding whether service had been restored and informed ORS that all issues with Frontier's equipment had been resolved. ORS informed Frontier of its intent to investigate the St. Luke Community extended service outage and examine the Company's use of USF support. ORS filed a First and Continuing Audit Information Request and Expedited Petition to Suspend and Withhold Universal Service Fund Disbursements on November 8, 2019.

Pursuant to Commission Order Number 2019-811, Frontier and ORS presented oral arguments on the matter on December 3, 2019, and the Commission determined that further oral arguments should be presented by Frontier and ORS during the subsequent week. Prior to continuation of the hearing scheduled for December 10th, ORS conducted a preliminary review of the records provided by Frontier on December 2, 2019, in response to ORS' Audit Information Request. On December 6, 2019, ORS filed a letter to request the Commission authorize ORS to resume the disbursement of monthly USF payments to Frontier but reserved the right to raise the issue again with the Commission should the ORS audit reveal information to warrant doing so. The Commission granted ORS' request in Order Number 2019-854 on December 10, 2019, and USF payments were disbursed to Frontier on December 12, 2019.

ORS Compliance Audit and Investigation

South Carolina Code of Laws §58-9-280(E) directs the Commission to establish the state's USF for carriers of last resort to provide "universally available basic local exchange telephone service at affordable rates...." Additionally, §58-9-280(E)(8) authorizes ORS to conduct compliance audits and other investigations of carriers of last resort authorized to receive funds from the USF. Pursuant to §58-9-280(E)(10), Frontier, as a carrier of last resort, is required to retain all records of operations required to demonstrate that the USF support the Company receives is used to support South Carolina programs for which it was intended and to make those documents available to ORS upon request.

The scope of ORS' investigation addressed two areas: (1) Frontier's operational practices related to service outage prevention and restoration and (2) Frontier's use of USF support in South Carolina and the Company's accounting practices related to USF support.

I. South Carolina Service Outage Prevention and Restoration Practices

Frontier operates 39 separate exchanges in rural and urban areas within its South Carolina network.¹ These exchanges utilize 28 central office switches and 11 remote digital terminals to provide voice telephone service to the Company's South Carolina customers.² The average age of Frontier's central office switches currently deployed in South Carolina is ■ years, with the newest being manufactured in ■.³ Frontier's currently-deployed remote digital terminals' average service life is ■ years. Additionally, the Company has been deploying advanced switching equipment and technology over the course of ■ years in ■ counties.⁴

Thirteen office and work locations are maintained throughout South Carolina to house Frontier technicians and other employees responsible for constructing, maintaining, and repairing the Company's South Carolina telecommunications network.⁵ Frontier's South Carolina-based personnel are supported by employees located in North Carolina, Florida, Texas, and other areas throughout the South.⁶

ORS conducted site visits with Frontier employees on January 3, 2020, in Georgetown County and Myrtle Beach to inspect Frontier network equipment. ORS examined equipment installed by Frontier to replace failed equipment that caused the outage in the St. Luke Community. ORS also observed more advanced technology recently deployed by the Company, including new equipment, supported by fiber optic lines, for the provision of internet service in Hemingway, SC and advanced switching equipment in Myrtle Beach, SC designed to provide Voice over Internet Protocol telephone services.

¹ Frontier Response to ORS Audit Information Request 1.16.

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ Frontier Response to ORS Audit Information Request 1.6.

⁶ *Id.*

Frontier Network Monitoring Procedures

Frontier has revised its procedures to diagnose and escalate network outages in response to the St. Luke service outage.⁷ The Company relies on Network Operations Centers (“NOC”) in the Dallas-Fort Worth Metroplex to monitor, support, and record network operations and conditions for the Company’s South Carolina facilities.⁸ The Frontier NOC records network outages in a ticketing application including the start time, end time, number of customers affected, and NOC technician notes.⁹

The NOC utilizes a diagnostic tool to receive alarms from network equipment to notify NOC technicians of service outages.¹⁰ Once an alarm is received, NOC technicians can access affected switches to determine the status of remote line units and attempt to remotely resolve any hardware faults.¹¹ Local field technicians are dispatched from the NOC with detailed instructions or next-steps to be followed to restore service if service cannot be restored remotely by NOC technicians.¹² If field technicians are unable to resolve the outage, NOC transport technicians use a separate software application to access the affected network equipment directly to triage the alarm and, if possible, remotely remediate the issue to restore service.¹³

Frontier attempts to resolve service outages caused by defective equipment in part by utilizing the Company’s life cycle asset management system. This system provides Frontier’s network reliability team with company-wide equipment inventory availability information to locate replacements for failed equipment.¹⁴ Frontier has procedures for externally acquiring replacement equipment for failed equipment if replacement assets are unavailable internally, including an evaluation by Company engineers of alternative solutions to determine the most appropriate and cost-effective option.¹⁵

⁷ See Frontier Outage Prevention Report (November 15, 2019) in South Carolina PSC Docket No. 2009-220-C.

⁸ Frontier Response to ORS Audit Information Request 1.1.

⁹ *Id.*

¹⁰ Frontier Response to ORS Audit Information Request 1.4.

¹¹ *Id.*

¹² Frontier Response to ORS Audit Information Request 1.17.

¹³ Frontier Response to ORS Audit Information Request 1.4.

¹⁴ Frontier Response to ORS Audit Information Request 1.15.

¹⁵ *Id.*

On October 10, 2019, at 1:23 a.m. the Frontier NOC detected that communication had been lost between a central office switch and remote terminal deployed in its Georgetown exchange.¹⁶ NOC support technicians worked with local central office technicians to diagnose the issue before engaging Frontier's network reliability team for field support on October 16, 2019.¹⁷ The NOC network reliability manager unsuccessfully attempted to resolve the outage remotely and the following day requested an engineering evaluation of alternative options to find a solution.¹⁸ Frontier determined on October 29, 2019, (13 days later and eight days after ORS contacted Frontier on October 21st) that replacing the failed equipment was the best option, and replacement equipment was located in the Company's internal equipment inventory system.¹⁹ Replacement equipment was shipped from Sarasota, Florida, and arrived in Georgetown on October 31, 2019.²⁰ Installation of the replacement equipment was completed, and service was restored on November 1, 2019.²¹

Frontier contacted each of its customers affected by the outage to ensure service had been restored and informed customers that Frontier provided three months of service credits on their upcoming monthly bill as a result of the extended nature of the service outage.²² Frontier calculated each customer's credit amount as a multiple of the customer's total monthly recurring charges plus the Federal Subscriber line charge, the Access Recovery charge, and the Carrier Cost Recovery charge billed to the customer's account.²³ Total aggregate service credits provided to customers impacted by the outage were \$3,540.43 and the average total amount of service credits each customer received was \$168.59.²⁴

¹⁶ Frontier Response to ORS Audit Information Requests 1.1 and 1.7.

¹⁷ Frontier Response to ORS Audit Information Request 1.7.

¹⁸ *Id.*

¹⁹ Frontier Response to ORS Audit Information Requests 1.1 and 1.15.

²⁰ *Id.*

²¹ Frontier Response to ORS Audit Information Request 1.7.

²² Frontier Response to ORS Audit Information Request 1.10.

²³ *Id.*

²⁴ *Id.*

Frontier determined that the Company's outage restoration procedures were inadequate to address the specific needs of the St. Luke Community. In outages affecting large number of customers, Frontier's response protocol included both a dispatch to the field and affirmative monitoring by Frontier's NOC, with escalation by the NOC to higher management levels within the Company as necessary.²⁵ As a result of the St. Luke Community outage, Frontier revised its service-restoration procedures for common-cause outages impacting less than 100 lines to mirror those used for larger outages (greater than 100 lines).²⁶ Effective November 5, 2019, all common-cause outages are automatically monitored by Frontier's NOC immediately upon identification of a common-cause event and are rapidly escalated to Frontier's Network Reliability team and regional management. This change to procedures for smaller outages, such as that experienced in the St. Luke Community, should result in service restoral in a timelier manner.²⁷

In conclusion, the outage that occurred in the St. Luke Community involved antiquated equipment in a remote area and the Company's restoration and escalation procedures failed. In addition to the Company's revised outage restoration procedures, ORS recommends Frontier develop, and submit to the Commission, (a) proposed procedures to notify the Commission, ORS, local County/City Administrators or Managers, and local County/City Emergency Managers of any extended service outage affecting the provision of 9-1-1 service to customers, and (b) proposed options to provide alternate means for affected customers to contact 9-1-1 service during extended service outages.

ORS also recommends Frontier report annually to the Commission on the status of the Company's switches and remotes in service that have exceeded their useful service life or are no longer supported by the equipment manufacturer and the Company's plans to upgrade and/or replace aging equipment.

²⁵ Frontier Response to ORS Audit Information Request 1.18.

²⁶ *Id.*

²⁷ *Id.*

ORS recommends Frontier take the necessary steps to maintain an inventory of equipment in South Carolina sufficient to restore service in a reasonable and timely manner (within 24 to 48 hours). ORS also recommends Frontier perform a review of the skills and technical expertise required for South Carolina technicians to determine if additional employees and/or training is needed in South Carolina to enable its South Carolina workforce to perform tasks currently executed by the Company's Texas-based NOC technicians.

II. USF Usage and Accounting Practices

ORS examined Frontier's use of USF support in South Carolina and reviewed the Company's practices regarding the requirement to track and document USF-related investments and expenses. ORS' investigation was conducted in accordance with S.C. Code §58-9-280(E).

Frontier received more than \$6.6 million in South Carolina USF support in 2019.²⁸ Frontier also receives more than \$2.7 million in support annually from the Federal Communications Commission's Connect America Fund Phase II program to support broadband deployment in eligible areas.²⁹

Frontier records its capital investments and expenses used in telecommunications network expansion, upgrades, improvements/replacements, and operation and maintenance of those investments according to the Uniform System of Accounts ("USOA") for Telecommunications Companies classification guidelines.³⁰ These classification guidelines are codified in Part 32 of Title 47, Volume 2, Chapter I, Subchapter B of the Code of Federal Regulations.

²⁸ S.C. Pub. Serv. Comm'n Docket No. 1997-239-C, Order No. 2016-756 (October 19, 2016).

²⁹ Frontier Response to ORS Audit Information Request 2.7.

³⁰ Frontier Response to ORS Audit Information Request 2.3.

Frontier indicated it would not be able to serve as a carrier of last resort in its South Carolina service areas without support from the South Carolina USF and might need to limit investment for maintaining and expanding its network in higher cost areas in the absence of such funding.³¹ Frontier indicated it used USF support to install and maintain its local exchange network but does not attempt to make what the Company described as an “arbitrary assignment” of investments and costs that are funded by the USF.³²

ORS conducted an in-depth analysis of the documentation provided by Frontier to identify and categorize expenditures that would have qualified as a cost eligible for use of USF funds for 2015 through October 2019.³³ To perform this analysis, ORS made assumptions regarding the appropriateness of a given capital expenditure by evaluating justification codes the Company assigned to capital expenditures and by evaluating operating expenses grouped according to USOA guidelines. While Frontier did not match specific assignments of USF funds to expenditures, Frontier produced sufficient records for ORS to perform its analysis.

Frontier budgets for planned network maintenance and plant modernization efforts at the corporate level one year at a time.³⁴ The Company is currently in the process of budgeting planned network maintenance and plant modernizations for 2020 and does not expect any material changes in South Carolina capital expenditures in 2020.³⁵ Frontier does not have estimates of how its future network investment will impact its expenses for operating and maintaining its South Carolina network.³⁶

³¹ Frontier Response to ORS Audit Information Request 2.6.

³² Frontier Response to ORS Audit Information Request 2.3.

³³ ORS reviewed similar information provided by Frontier for 2012 through June 30, 2017 in preparation for ORS' May 25, 2018 report to the State Regulation of Public Utilities Review Committee on the State Universal Service Fund. See

<https://ors.sc.gov/sites/default/files/Documents/Consumers/Telecommunications/5-23-18%20USF%20PURC%20report.pdf>. In the instant examination, ORS reviewed updated and more granular data on Frontier's 2015-2019 USF expenditures.

³⁴ Frontier Response to ORS Audit Information Request 2.6.

³⁵ *Id.*

³⁶ *Id.*

In conclusion, Frontier does not make a specific assignment to track investments and expenses that are funded by USF, however, based on the records produced, Frontier expends in South Carolina amounts greater than that received in SC USF to support the provision of voice communication services.

ORS recommends Frontier implement a project monitoring system to specifically track and identify USF-related capital and operational expenditures in South Carolina. The project monitoring system should enable the Company to designate capital investments or operating expenses as being funded by USF support.

ORS also recommends Frontier dedicate a greater portion of the USF support the Company receives on capital investments to replace aging infrastructure in rural areas of its service territory rather than support recurring operational expenses, and recommends Frontier engage in efforts to budget for planned network investments and plant modernization efforts at least two fiscal years in advance.

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